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ABSTRACT

This document presents the guidelines for the California Community College 2000-2001 State-Funded Telecommunication and Technology Infrastructure Program (TTIP) Program. The 2000-2001 State Budget Act contains $44.3 million for expenditures on the TTIP. The Act provides that $31,600,000 be allocated to colleges for the following purposes: (1) data and video network services provided by the California State University and California Community Colleges Network (4Cnet), including the acquisition and installation of equipment, lease of communications lines, software and other costs associated with connecting to the network; (2) local planning and development for improving library technology; (3) digital and analog satellite systems and components that were funded in fiscal year 1996-97; (4) development of technology plans on how each campus will implement the Technology II Strategic Plan; (5) campus development and expansion of local- and wide-area networks; and (6) technology training for faculty and staff. One hundred and seven community colleges and nineteen district sites participate in the TTIP. This report lists the allocated funding for each program, along with contact information for each sponsor. A detailed expenditure plan and reporting requirements for TTIP are also discussed. Appended are standards and guidelines for video conferencing, library automation and electronic resources, satellite analog and digital downlinks and uplink, local telecommunication planning, and allocation and expenditure of the Technology Human Resources Fund; the total cost of ownership guidelines; distance education access guidelines for students with disabilities; a workshop schedule; and relevant forms. (CJW)

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FISCAL YEAR 2000-2001 TELECOMMUNICATION AND TECHNOLOGY INFRASTRUCTURE PROGRAM (TTIP) CERTIFICATION FOR EXPENDITURES

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TABLE OF CONTENTS

I. **California Community College Guidelines for 2000-2001 State Funded Telecommunication and Technology Infrastructure Program (TTIP)** 1
II. ACCOUNTABILITY 1
III. AUDIT 2
IV. ALLOCATION PLAN 2
4CNet 2
Library Automation and Electronic Resources 2
Satellite 3
Technology Planning 3
Technology for Access through Total Cost of Ownership (TCO) Options 4
Technology Human Resources Training Fund 4
V. EXPENDITURE PLAN 6
A. Expenditure Areas 6
B. Relationship to Other Areas of Technology and Telecommunication Expenditures 6
C. Analysis of the Conformance of the Plan to Applicable Standards and Guidelines 6
D. How Each Expenditure Area in the Plan will assist in meeting the goals of Improved Learning, Student Services, and Administrative Services 6
VI. REPORTING REQUIREMENTS 7
A. Telecommunications and Technology Infrastructure Reporting 7
B. Expenditure Plan Reporting 7

Appendix A – Standards and Guidelines for Video Conferencing 8
Appendix B – Standards and Guidelines for Library Automation and Electronic Resources 10
Appendix C – Standards and Guidelines for Satellite Analog and Digital Downlinks and Uplink 13
Appendix D – Standards and Guidelines Local Telecommunication Planning 16

Appendix E – Total Cost of Ownership Guidelines 18
Appendix F – Standards and Guidelines for Allocation and Expenditure of the Technology Human Resources Fund 24
Appendix G – Distance Education: Access Guidelines for Students with Disabilities (Excerpts; Legal Requirements and Basic Requirements for Providing Access) 29
Workshop Schedule 34

Forms To Be Submitted **35**
2000-2001 TTIP Certification Checklist 36
Form A: 2000-2001TTIP Certification for Expenditure (Signature form) 37
Form B: 2000-2001 TTIP Expenditure Plan 38
Form C: 2000-2001 TTIP Technology Training Expenditure Plan 40

CALIFORNIA COMMUNITY COLLEGES
GUIDELINES FOR 2000-2000 STATE FUNDED
TELECOMMUNICATION & TECHNOLOGY INFRASTRUCTURE PROGRAM
(TTIP)

The 2000-2001 State Budget Act contains $44.3 million for expenditure on the TTIP. The Budget Act provides that $31,600,000 shall be allocated to colleges for the following purposes:

1. data and video network services provided by the California State University and California Community Colleges Network (4CNet) including the acquisition and installation of equipment, lease of communication lines, software and other costs associated with connecting to the network, including video conference connectivity, transport, and maintenance; (NOTE: Funds were allocated to the districts as part of their August 2000, Advance General Apportionment for the data and video portions of 4CNet services.);
2. local planning and development for improving library technology including library automation, library connections to college local area networks; library technology plans and connections to external databases;
3. digital and analog satellite systems and components that were funded in fiscal year 1996-97;
4. development of technology plans on how each campus will implement the Technology II Strategic Plan;
5. campus development and expansion of local area networks both within and between buildings; development of district wide area networks for interconnecting multiple campuses and off - campus centers within the district; implementation of local technology applications that are intended to improve student learning and other services. These options are based on a Total Cost of Ownership Model and are detailed in Appendix E. (Distance education resources must be designed to provide "built-in" accommodation where possible (i.e., closed captioning, descriptive narration) and/or interface design/content layout which is accessible to "industry standard" assistive computer technology in common use by person with disabilities. See Appendix G).
6. training in technology for faculty and staff;

II. ACCOUNTABILITY

State funds allocated pursuant to Item 6870-101-0001, Provision 18, Schedule (s), of the 2000-2001 Budget Act shall be accounted for in the General Fund, Part B-Restricted. This revenue shall be expended only for those items defined herein. The revenue shall be recorded as State Revenue, Categorical Apportionment (Controlling Account 8620, subordinate classification: Other Categorical Apportionment). The expenditure of this money shall be recorded in accordance with the California Community College's Budget and Accounting Manual.

Any balance in the accounts as of June 30, 2001 shall be carried over to the next fiscal year and continued as restricted for the designated purposes. **In signing this certification, districts agree to expend the allocated TTIP funds in accordance with the requirements of Item 6870-101-0001, Provision 18, Schedule (s), of the 2000-2001 Budget Act.**

III. AUDIT

District expenditures of the funds shall be reviewed as part of the contracted audit (ECS 84040).

IV. ALLOCATION PLAN

One hundred and seven community college sites and nineteen governing sites not co-located on a campus and the Chancellor's Office, California Community Colleges are continuing their participation in the TTIP. Funds for maintaining the data and video connections to 4CNet were distributed through the advance apportionment process in August 2000. Districts must submit by November 22, 2000, the 2000-2001 TTIP certification document to the Chancellor's Office for review and approval for conformance with the stated standards and guidelines. Upon final approval, districts will receive the funding in the following manner.

1. ***4CNet*** *(Chancellor's Office Contact Person, Catherine McKenzie (916) 322-0833 or* cmckenzi@cccco.edu)

   Each college/district site received $23,000 for continued connection to the 4CNet for data network services at the T1 bandwidth standard. The $23,000 consisted of $19,800 for lease line cost and $3,200 for network infrastructure cost. In addition, each college/district site received $12,300 for continued connection to the 4CNet for video network services at the T1 bandwidth standard. (See Appendix A for background information).

2. ***Library Automation and Electronic Resources*** *(Chancellor's Office Contact Person Carolyn Norman (916) 322-6290* cnorman@cccco.edu *)*

   Each college site received an allocation of $37,383 for library automation and electronic resources. The required areas of expenditure for 2000-2001 funds are subscriptions to Online Information Resources, which might include some of the following areas:

   1. A periodicals database of at least 1,000 full-text titles;
   2. A newspaper database in full-text format;

3. An online encyclopedia resource and
4. An online bibliographic verification and evaluation database.

Additional electronic resources can be acquired once the above areas are met.

3. *Satellite* *(Chancellor's Office Contact Person Catherine McKenzie (916) 322-0833 cmckenzi@cccco.edu)*

Colleges/districts can now take advantage of a cooperative purchase agreement to leverage the 1996-1997 funds allocated for this purpose. The California Community Colleges Satellite Network (CCCSAT), hosted at Palomar College, is operational and ready for colleges/districts to order and install downlink equipment. (See Appendix C for background information)

Ordering information is available at http://www.bitcentral.com/ . Click on the CCCSAT icon (password is CCCSAT). Equipment and installation cost is $4,155. Any unused funds from the amount originally funded can be used in any other areas of the program.

The standard equipment is:

- 1.8 meter antenna with non-penetrating roof mount – 1/8" rubber mat
- LNB
- Digicipher II Receiver
- Installation Kit
- Initial Site Survey
- Non-penetrating roof/ ground mount installation
- Inspection and Certification of all installations
- 9 X 5 on-site maintenance per calendar year

4. *Technology Planning* *(Chancellor's Office Contact Person Lindy Williams (916) 322-9048 lwilliam@cccco.edu)*

Each college site will receive an allocation of $25,000 for technology planning purposes.

Each district site not co-located on a college will receive an allocation of $9,700 for technology planning purposes.

Each college/ district is to use the allocation to plan on how they will implement the Technology II Strategic plan on their site. The Chancellor's Office, in

association with Telecommunications and Technology Advisory Committee (TTAC) and the Chief Information Officers (CISOs), are currently developing guidelines and templates to assist the colleges in effectively and efficiently developing plans for the implementation of the Technology II Strategic Plan targeted to begin in July 2001.

5. ***Technology for Access through TCO Model Options*** *(Chancellor's Office Contact Person Charles Mawson (916)327-5902 cmawson@cccco.edu)*

The TTIP has $10.9 million allocated for Technology for Access through the Total Cost of Operation (TCO) Model options. The 2000-2001 Budget Act stipulates $197,811 be provided for each of the 109 colleges. In calculating the allocations above (1-3), there is a balance of $100,128 for the colleges in the fiscal year 2000-01 to use in any of the nineteen (19) categories of the TCO model listed in Appendix E.

As a summary, broad categories covered under the TCO model include:

- Hardware/Software
- Systems Management and Support
- Development Support
- Communications Support
- Training

The Chancellor's Office will be conducting workshops to assist the colleges and districts in better understanding the Total Cost of Ownership concept and the baselines established through the CCC Technology II Strategic Plan.

6. ***Technology Human Resources Training Fund*** *(Chancellor's Office Contact Person Frank Abbott, (916) 327-6240* fabbott@cccco.edu

The TTIP has $8 million allocated for technology human resources training. The 2000-2001 Budget Act stipulates that the $8 million shall be allocated based on a funding formula which (1) guarantees a base grant for small sites; and (2) takes into account faculty and staff loads. The $8 million shall be allocated to the 126 community college sites as follows: (1) A base allocation for districts and colleges ($1.5 million); (2) faculty Full Time Equivalent (FTE) allocation per site ($4.3 million); and (3) staff FTE allocation per site ($2.2 million).

Base Allocation - The base allocation of $1.5 million shall be divided into two areas. First, districts not co-located on a college campus will be allocated 10% of $1.5 million ($150,000); and second, 90% of $1.5 million ($1,350,000) will be allocated to colleges as base allocations. The district allocation, based on 19 districts, is $7,895. The college allocation, based on 107 colleges, is $12,617.

Faculty Allocation - A faculty allocation of $4.3 million shall be distributed based on the number of FTE, which includes both full time and part time faculty as reported by college districts to the Chancellor's Office for the Report on Staffing and Salaries to the California Community College System for 1999.

The faculty allocation formula shall be the number of reported FTE/full time and part time faculty, divided by the total statewide FTE/full time and part time faculty, times $4.3 million.

Example: (200FTE/20,000Total Statewide FTE) X $4,300,000 = $43,000

Staff Allocation - A staff allocation of $2.2 million shall be distributed based on the number of FTE staff, as reported by college districts to the Chancellor's Office for the Report on Staffing and Salaries to the California Community College System for 1999.

The staff allocation formula shall be the number of reported FTE staff, including Professional, Academic Administrative, Classified Administrative and Classified non-Administrative, divided by the total statewide FTE staff, times $2.2 million.

Example: (100FTE/20,000 Total Statewide FTE) X $2,200,000 = $11,000

Eligible Funding Areas - Colleges must develop an expenditure plan for these funds in delineated areas. (See Appendix F)

V. EXPENDITURE PLAN

THE EXPENDITURE PLAN FOR FISCAL YEAR 2000-2001 MUST BE SUBMITTED TO THE DISTRICT'S LOCAL BOARD OF TRUSTEES FOR APPROVAL. NOTE: IF CHANGES ARE MADE TO THE SUBMITTED TTIP CERTIFICATION PLAN IN EITHER FUNDING OR OBJECTIVE, THE CHANGES NEED TO BE RESUBMITTED TO THE LOCAL BOARD OF TRUSTEES FOR APPROVAL AND FORWARDED TO THE CHANCELLOR'S OFFICE.

A. Expenditure Areas

Districts must meet the required expenditure in the following six areas for each site prior to expending funds in other areas. If sites have accomplished the adopted standards and guidelines without the use of these funds, they may spend these funds in any of the six areas.

1. Continued connectivity to the 4CNet for data and video conferencing, including the lease of communication lines, software and other associated costs. (Appendix A)
2. Library Automation and Electronic Resources (Appendix B)
3. Acquisition of digital satellite downlink equipment for sites. (Appendix C)
4. Technology Planning (Appendix D)
5. Technology for Access through TCO Model Options (Appendix E)
6. Faculty and staff development in technology (Appendix F)

B. Relationship to Other Areas of Technology and Telecommunication Expenditures

A district's expenditure plan should clearly identify the use of these funds in relationship to the district's other technology and telecommunications expenditures. This plan should include funds received from general apportionment allocations, instructional equipment and library materials and technology, as well as special project funds received from state, federal, or private grants.

C. Analysis of the Conformance of the Plan to Applicable Standards and Guidelines

The expenditure plan should state how the funds meet the minimum standards and guidelines specified in the attached appendices for 4CNet connections for data and video conferencing, satellite downlinks, technology for access, technology training for faculty and staff and library automation and electronic resources, as applicable.

D. How Each Expenditure Area in the Plan Will Assist in Meeting the Goals of Improved Learning, Student Services, and Administrative Services

The district's expenditure plan should state how the district's use of video conferencing technology, satellite technology, TCO Model and library automation and electronic resources will improve student learning, student services delivery and administrative services. (Both state and federal law require community colleges to operate all programs and activities in a manner which is accessible to students with disabilities. See Appendix G.)

VI. REPORTING REQUIREMENTS

Upon receipt of funds, districts will be required to annually report the existing inventory status of their telecommunications and technology infrastructure expenditures in relationship to their approved expenditure plan. The reports will be used to compile an annual report that is mandated by the legislative. A copy of the Telecommunications Legislative Report may be requested by contacting Charles Mawson at (916) 327-5902 or via e-mail **cmawson@cccco.edu**, after December 31, 2000.

A. Telecommunications and Technology Infrastructure Reporting

Districts must report on their telecommunications and technology infrastructure on an annual basis by completing the *California Community College Telecommunications and Technology Physical Inventory*. The inventory is designed to provide information on a wide range of technologies and capabilities at a college. During fiscal year 1999-00 the format of the physical inventory was adjusted to gather data to support the development of the Technology II Strategic Plan. Colleges did not have to submit a Physical Inventory during 1999-00. During 2000-01 the inventory format will be revamped further to align with the Technology II Plan. The inventory, which will evolve into a Baseline Survey, will be conducted on a site by site basis. If the college and the district are located on separate facilities, each site must be inventoried separately. Multiple college districts must conduct separate inventories for each college within the district. Reporting forms will be provided to sites in early February 2001, and reports will be due back to the Chancellor's Office by May 31, 2001.

B. Expenditure Plan Reporting

Districts are to report on the actual funds expended in relationship to the Expenditure Plan adopted by the local governing board. Any balance in the accounts as of June 30, 2001, shall be carried over to the next fiscal year and continued as restricted for the designated purposes. The report is due by August 31, 2001.

Appendix A - Standards and Guidelines for Video Conferencing

Overview: Video conferencing is one of four basic requirements for the TTIP, Phase 1. Its focus is to facilitate real-time interactions for participants in instruction and administrative staff meetings within a single college or district and/or between colleges in the CCC System. Video conferencing allows two-way video and two-way audio between point to point and multiple sites. This technology allows the participants to meet without traveling and therefore, reduces travel cost and improves the productivity of employees by not losing time to travel. The use of video conferencing in the classroom offers the best comparison to the traditional classroom between remote sites. Colleges can bring together students from different locations and conduct classes that otherwise might not be available.

Background: In 1996, the Chancellor's Office brought together community college representatives to identify minimum standards for a statewide community college video conferencing network. In May 1997, a common equipment standard was selected, PictureTel Venue 2000, Model 50. Significant price reductions were achieved for colleges to acquire the equipment through a Statewide Cooperative Purchase Agreement.

In 1997-98, the first stage of a two-stage process to implement a systemwide video conferencing network was started. Stage one was an interim use of ISDN to connect colleges and to allow them to use the video conferencing technology. Funds were used to: (1) address intra-campus, inter-campus, and external connectivity; (2) external connectivity costs for direct dial ISDN to the Minimum Point of Entry (MPOE); 3) the purchase and/or leasing of multipoint bridge(s); (4) dial up for ISDN connectivity; (5) funding for dedicated video conferencing facilities in the future; and (6) training.

In 1998-99, stage two was designed to use the 4CNet to carry video conferencing signals between the colleges. It expands the capability of the 4CNet by carrying both data and video traffic over the backbone of the network. This will reduce long distance cost on video conference calls between colleges and insure a level of reliability between sites.

Status: Video was deployed over the 4CNet backbone by establishing a separate T-1 line for video purposes for each approved site. Sites will be connected to the backbone starting in June 2000, and ending October 2000. The 4CNet Network Operating Center (NOC) will maintain and operate as the video network control site. Video bridging will be a component of services offered by the network as part of overall costs. There will be no long distance costs to sites on the backbone. There will be a minimum of 149 video conference sites on the network, connecting 126 CCC sites and 23 California State University (CSU) sites.

1. Funding

- Sites are funded for video in 2000-2001 for up to $12,300 per year.

2. Costs

On-going costs in 2000-2001 will be:

- $12,300 per year

3. Backbone Upgrades

In order to accommodate the deployment of video over the backbone, the 4CNet ATM backbone was expanded from DS-3 to OC-3 in 1999-00. Starting in September 2000, the ATM backbone expansion from OC-3 to OC-12 will begin. This is being done to prepare for the bandwidth expansion at the campuses in conjunction with the CCC Technology II Strategic Plan.

Reference: 4CNet, CCC Video Conferencing Project
URL: www.csu.net/ccvideo/ccc-videohome.html

Appendix B - Standards and Guidelines for Library Automation and Electronic Resources

Overview: The access and use of information resources is a critical aspect of student learning and success and instructional improvement. The primary focus of the library and learning resources technology and electronic resources initiatives is to provide faculty and students access to the resources in the CCC system's libraries and learning resources programs. The first phase initiative was a three year program designed to establish library automation capability at all CCC libraries. Upon completion, students, faculty, and administrators sould be able to search any CCC or CSU library.

The library automation and electronic resource initiative was a required area within the TTIP. The initiative was the second of the four areas that inter-connect all of the colleges and districts via the 4CNet. The initiative is based on the principles that emphasize as a required standard library automation and compliance with Z.39.50. The rationale is to allow for the creation of a statewide "system" that maximizes shared resources and increases student and faculty access to instructional collections and services. It addresses standards and guidelines associated with library automation, digitizing catalogs for on-line uses, and electronic resources.

Background: In the Fall of 1996, the Library Automation Standards and Guidelines Committee met to establish preliminary standards for the Library Automation and Electronic Resources Initiative. A Library and Learning Resources Automation Survey was administered to the colleges in August 1997, to determine the level of automation and utilization of technology by college libraries and learning resource centers. Ninety-eight percent (98%) of the colleges responded to the survey.

The plan to implement Library Automation in every CCC college was distributed over a three year period. The first year of the initiative was 1997-98. The total cost over the three year period calculated at $200,000 per college is $21,400,000. In year one, colleges were required to convert at least 75% of their catalog records to the US MARC format and to acquire a FAX machine for the library. US MARC is the foundation format for library automation and electronic resources. It is the universal format for the conversion of library collections into a machine readable format. Fax machines are essential for borrowing and lending information within the community college system.

In years two and three, colleges were to acquire and install a library automation system consistent with the established system wide standards and develop a Library Technology Plan. The level of technological integration varied throughout the CCC's. The initiative was based on the principle that there should be no "disincentives" to further technology integration on the part of those libraries that currently meet the "required areas".

Required Areas were:

1. Library Automation system (defined as OPAC, Cataloging, Circulation modules) that is Z.39.50 ANSI compliant, due to be completed by June 30, 2001.

2. Library Technology Plan, due by June 30, 2000.

Library Automation System and Directly Related Costs. The library automation system was to adhere to the Z.39.50 ANSI protocol. The initial modules to be acquired and or upgraded were:

Cataloging,
Electronic Public Catalog (OPAC), and,
Circulation.

If an existing automation system does not meet the Z.39.50 ANSI protocol and the college has not committed funds to upgrade to the Z..39.50 ANSI protocol within one fiscal year, the system was to have been upgraded to this protocol before funds could be expended in other areas. (Documentation to this effect was to be included with the expenditure plan.)

Library Technology Plan. Every college was to have a Library and Learning Resources Technology Plan and funds could have been used for this purpose. Workshops and Model frameworks coordinated by the Library and Learning Resources Telecommunications Committee were conducted in 1998-99. The Library Technology Plan was to have been developed under the leadership of the Library Dean or Director for the college.

Other Library Areas

When a college met the two required standards for libraries, the telecommunications funds could have been spent in any of the seven areas of the TTIP. Colleges may have elected to retain these funds within the library area. If so, they could have expended funds in any one of eleven library areas. They were:

1. Enabling technologies for disability access. (This was highly recommended in fiscal year 2000-2001)
2. Electronic Resources & Databases
   No more than 10% of the college's total allocation could be spent on electronic resources and databases until the following criteria are met:
   - an automation system with the Z.39.50 ANSI protocol,
   - a minimum of five public access points (terminals) in the library, and,
   - remote access capability for a minimum of five simultaneous users.
3. Internet Connectivity & Access
   Every library should have a degree of Internet connectivity and access which should include:
   - Web Access to staff and public users,
   - E-Mail access from outside users to the library, and

- Telnet access to the on-line catalog.

4. Library Teaching Lab
5. Library WEB Server
6. Multi-media workstations/Collections
7. Electronic Reserves software
8. Instructional development workstations/peripherals
9. CD-ROM networks
10. Service Maintenance Contracts on above Technologies.
11. Library Technical Support staff.

Status:
The three year TTIP program's initial objectives have been achieved through the standards met and the library plans submitted. This first phase initiative was a three year program designed to establish library automation capability at all CCC libraries. The focus for 2000-01 will be on on-going Online Information Resources such as subscriptions, which might include some of the following areas:

1. A periodicals database of at least 1,000 full-text titles;
2. A newspaper database in full-text format;
3. An online encyclopedia resource and
4. An online bibliographic verification and evaluation database.

Additional electronic resources can be acquired once the above areas are met.

Funding: Each college site will receive an allocation of $37,383 for these electronic resources

Appendix C - Standards and Guidelines for Satellite Analog and Digital Downlinks and Uplink

Overview: There was a need identified in the planning phase of the Technology I Program to provide satellite downlink capability for each California Community College using both analog and digital technology. Satellite downlink capability was one of the minimum requirements for inter-college connectivity specified in the telecommunications infrastructure. The satellite network was one of four intra-state activities connecting the CCC system in the TTIP.

The CCC Satellite Network (CCCSAT) will enable colleges and districts to distribute and receive instructional classes and programs, administrative data, and faculty and staff development activities. When fully implemented, colleges and districts will be capable of receiving three types of satellite signals, two analog and one digital. The network will provide a vehicle for colleges to deliver content across the state , nation, and globe. Through the 4CNet, any college will be able to deliver a video signal to the CCCSAT digital uplink facility and to a satellite. Programming will focus on a variety of academic, student services, and administrative needs.

Background: In 1996-97, all colleges that did not have analog and /or digital downlink capability were allocated funding for that purpose. In 1997-98 all districts which did not have analog and/or digital downlink capability were allocated funding for that purpose. Since the MPEG-2 standard was not selected until May 1997, we asked colleges to not purchase any digital equipment until a review by the CCC and CSU technical staff was completed.

In 1997-98, the two systems completed their review of existing satellite downlink equipment and selected Data General as the recommended manufacturer. Though we initially focused on their "Magnitude" line, their newer "Digicipher" line is now preferred. This selection will enable colleges and districts to share programming with CSU campuses, K-12 County Offices of Education and PBS stations who use the same equipment.

In early fall 2000, the CCCSAT Grant was awarded, through a competitive process, to Palomar College. Palomar College issued an RFP to select a common vendor to take advantage of cooperative purchase and therefore, leverage the system's dollars due to its size. The current standards for satellite communications are:

1. Digital Satellite Standards (MPEG-2)
   - ✓ 1 ea. General Instruments Digicipher II DSR-4200V
     Compressed Digital Video Satellite Television Receiver/Decoder
   - ✓ 1 ea. KU-Band Satellite Phase Stable Low Noise Block Down Converter
   - ✓ 1 ea. KU-Band satellite antenna with single port feed, fixed mount and coaxial lead-in cable (1.8 meter maximum size)

- ✓ Equipment specifications should include encryption capability and compatibility with CSU campuses, K-12 County Offices of Education and PBS stations who use the same equipment

2. Analog Standards
   - ✓ 1 ea. KU & C-Band downlinks or
   - ✓ 1 ea. Dual KU/C-Band Convertible analog downlink

(Note: We recommend that the satellite downlink be earth mounted)

Status: Satellite Uplink System

CCCSAT, the broadcast center was operational by August-2000. Direct any questions concerning the operation and programming for CCCSAT to their project director Sherry Hargraves, 760/744-1150 x 2722 or shargraves@palomar.edu

Though operation will be limited initially, it is anticipated that CCSAT will ultimately provide the following:

1. Live programming
2. Telecourses
3. Live interactive courses
4. PBS courses
5. 24 x 7 year round programming
6. Channel for faculty/staff training
7. Purchase of time for a minimum of five channels
8. Capability of world-wide transmission/reception

Status: Satellite Campus Downlinks

Colleges/districts can now take advantage of a cooperative purchase agreement to leverage the 1996-1997 funds allocated for this purpose. The California Community Colleges Satellite Network (CCCSAT) is operational and ready for colleges/districts to order and install downlink equipment.

Ordering information is available at http://www.bitcentral.com/ . Click on the CCCSAT icon (password is CCCSAT). Equipment and installation cost is $4,155. Any unused funds from the amount originally funded can be used in any other areas of the program.

The standard equipment is:

- 1.8 meter antenna with non-penetrating roof mount – 1/8" rubber mat
- LNB
- Digicipher II Receiver
- Installation Kit
- Initial Site Survey
- Non-penetrating roof/ ground mount installation
- Inspection and Certification of all installations
- 9 X 5 on-site maintenance per calendar year

Reference: California Community Colleges Satellite Network (CCCSAT)
URL: www.cccsat.org

Appendix D - Standards and Guidelines for Technology Planning

Overview: The year 2000-01, would be the first year of implementation for Technology II, the second Phase of the telecommunications and technology implementation in the CCC system. By that year, the system would have achieved systemwide connectivity in data, video, satellite and library automation. The start of the second phase will focus on the use of technology to improve teaching and learning and the continued expansion of the local technology infrastructure of colleges.

The California Community Colleges has been in the process of developing a strategic technology plan for the next five years, the CCC Technology II Strategic Plan. This plan has been through a rigorous review and consultative process. One of the recommendations that came early in this review process was that funds should be set aside in the year preceding the actual start-up of a fully funded Technology II. The TTAC Committee wanted to prevent delays in implementation should colleges and districts have waited until July 2001 to begin prepare for this new funding. The successful development and implementation of the telecommunications and technology is dependent on an effective technology planning process.

Background: TTIP did provide funding to 12 college districts in 1996-96 and 8 in 1998-99 via the competitive grant program, Telecommunications Model Application Pilot Program (TMAPP). Standards and guidelines were developed in 1996-97 to provide tools for colleges to conduct planning in this area. Colleges were provided $25,000 in mini-grants to assist in the planning process. Projects were required to use the established standards and guidelines in developing their local plans. The Chancellor's Office conducted workshops to provide technological assistance to colleges in this area.

Guidelines:

1. An educational program on local telecommunication and technology planning will be implemented by the Chancellor's Office.

   In 2000-2001, the Chancellor's Office will actively conduct a series of seminars and workshops regarding local telecommunication and technology implementation planning. The workshops will focus on the various components of the planning process and describe the variety of instruments that are available to the colleges to carry out such planning efforts. These sessions could also be used to describe the local planning strategy being proposed for 2000-2001.

   The Chancellor's Office, in association with Telecommunications and Technology Advisory Committee (TTAC) and the Chief Information Officers (CISOs), are currently developing guidelines and templates to assist the colleges in effectively and efficiently developing plans for the implementation of the Technology II Strategic Plan which is targeted to begin in July 2001.

2. The development of a local telecommunication and technology plan will be elevated from an optional area to a required area in 2000-2001.

   In FY 2000-2001, colleges will be required to develop a telecommunication and technology implementation plan. The development of this local plan should be completed in conjunction with the college's academic, facility and current technology plans.

3. Funding will be provided in 2000-2001 to all colleges for the purpose of developing a local telecommunication and Technology II Implementation plan .

   As a part of the 2000-2001 TTIP Program, $25,000 will be provided to colleges for the purpose of developing a local telecommunications and technology implementation plan. In addition, $9,700 will be provided to each of the 19 governing sites identified in 2000-2001 budget language. The funds would be used as part of an overall effort of the colleges to plan for telecommunications and technology in relation to the CCC Technology II Strategic Plan.

4. Colleges ill be required to have Local Telecommunications and Technology Implementation Plans in place by July 1, 2001, as a pre-requisite to their receiving TTIP funding in FY 2001-02.

APPENDIX E: Student, Faculty, and Managerial and Classified Staff Baseline Standards with TCO Categories

Overview: When educational institutions acquire computer hardware/software, they do so without factoring in the costs to support the equipment and infrastructure. As a result, there is often a lack of support to maintain, repair, improve performance of the equipment, as well as a lack of staff for training faculty, staff, and students. This creates delays and inefficient use. The TCO funding concept assumes a relationship between computer hardware/software and support. It is a method of determining the full cost associated with owning and using computers in an educational environment.

Background: Since 1987, GartnerGroup has counseled enterprises to consider all costs associated with computing when making management decisions about desktop and LAN acquisitions, upgrades, support and administration. During this time, GartnerGroup has created and evangelized the concept of TCO to the IT community. As enterprises have begun to address the significant and rising costs devoted to their IT infrastructure, the message has gained wide acceptance among IT users. As technology suppliers seek ways of differentiating themselves meaningfully, they too have turned to the TCO model as a means of underscoring their value to the customer.

Used as a management tool as part of an enterprise's annual planning process, the TCO model can become part of a continuous process of measurement, simulation and improvement. Because budget decisions are ultimately based on a set of strategic IT goals, most enterprises must be able to determine various levels of TCO based on the decision being made. By using the TCO model, enterprises can:

- Translate IT cost, staff, budget and other metric information into a TCO "chart of accounts" for each organization.
- Compare the enterprise's actual TCO to typical TCO-based external comparative data. The typical TCO reflects the enterprise's unique business type, size, worldwide location, assets, technology and complexity against other enterprises doing similar levels of work.
- Audit the results to highlight strengths and weaknesses in the enterprise's actual TCO.
- Create a proposed environment or target TCO based on improvements to assets and changes to technology and complexity, and compare the target TCO with the actual TCO.

The breakdown of direct and indirect costs used in the GartnerGroup TCO Model include:

- Direct (i.e., budgeted) costs - measure the direct expenditures on IT by an organization (e.g., capital, labor and fees);

- Hardware and software - the capital expenditures and lease fees for servers, client computers (e.g., desktops and mobile computers), peripherals and network components;
- Management - the direct network, system and storage-management labor staffing, activity hours and activity costs, maintenance contracts and professional services or outsourcing fees;
- Support - the help-desk labor hours and costs, help-desk performance metrics, training labor and fees, procurement, travel, support contracts and overhead labor;
- Development - the application design, development, test and documentation labor and fee expenditures including new application development, customization and maintenance;
- Communications fees - the inter-computer communication expenses for lease lines, server access remote access and allocated WAN expenses;
- Indirect (i.e., unbudgeted) costs - measure the capital and management efficiency of IT in delivering expected services to end users;
- End-user IS - the cost of end users supporting themselves (and each other) instead of relying on formal IS support channels (i.e., peer and self support), end-user formal training, casual learning (i.e., non-formal training), self-development/scripting of applications and local file maintenance;
- Downtime - the lost productivity due to planned (i.e., scheduled) and unplanned network, system and application unavailability, measured in terms of lost wages (i.e., lost time).

The GartnerGroup research shows that the initial cost of hardware and software represents only 30 percent of the Total Cost of Ownership (TCO). GartnerGroup and the Telecommunications and Technology Advisory Committee (TTAC) worked at length to determine the TCO model appropriate for the Community College environment. The final section of this appendix provides more detail on the TCO model, including the TCO model components and the cost associated with them.

The cost estimate for the technology using the Total Cost of Ownership model for the Community College is **$3,506 per PC.** Therefore, a TCO computer is one that is funded at a level of support that corresponds to the 19 elements of the TCO model. The TCO model is designed and constructed to be reviewed and analyzed on a continual basis reflecting the ongoing changes and costs as they relate to equipment, software, training, and support personnel. The TTAC will review the model annually to determine adjustments to it as appropriate. The next tables describe the PC baselines models for students, faculty, and managerial and classified staff. **The TTIP program's intent is to fund the colleges to the baseline minimums using the TCO categories**.

The TTIP Program will provide a baseline level of technology for students, faculty and staff, including these sorts of features to support the goals of student access and success:

- A ratio of 1 computer for every 20 students;

- Computers for all full-time faculty, adequate access for all part-time faculty, and computers for appropriate administrative and support staff;
- A refresh rate of once every three years for computer replacement;
- Access for students, faculty and staff to printers, the local area network, office and virus protection software, and other key information resources, e-mail, and the Internet;
- Computers that are accessible by the disabled based on 10 percent of all workstations;
- Support staffing for both technical backup and direct support for students and faculty;
- Ongoing training for faculty and staff;

Student PC Baseline Standards

	Category	Minimum Baseline Standard
A1	PCs for student	Year 2000 – 2005: 1 PC for every 20 FTES 10 percent of all campus computer systems will be configured with industry-standard assistive computer technology to provide access to students with disabilities.
A2	Printers	Sufficient printing will be available.
A3	LAN Access	Each PC will be LAN connected.
A4	Office Software	The majority of PCs will be equipped with office software. It will be up to the campus to decide whether to use a uniform configuration or a hosted applications model.
A5	Information Resources & Software	Each PC can access library databases, instructional servers, Web sites and instructional software. Campuses will make every effort to assure that these resources are operational with industry-standard assistive computer technology.
A6	E-mail	Each PC will have Web-based access to the campus e-mail system. Students are required to obtain an ISP for access.
A7	Internet/intranet Access	Each PC is equipped with a browser for Internet access
A8	Virus detection software	Each PC is equipped with anti-virus software.
A9	Access to student services system through Internet/intranet only	Each PC will provide students with Web access to student services.
A10	Refresh rate and currency of computers	PCs and assistive-computer technologies will be replaced on a three-year basis, consistent with industry best practices. The rationale is to reduce TCO by introducing more manageable equipment and refreshing with new software
A11	PC support infrastructure	CCC campuses will use best-practice approaches to manage their PC population (e.g., ability for remote monitoring and management, electronic inventory of hardware and software)

Table 1. Student PC Baseline Standard

Faculty PC Baseline Standard

	Category	Minimum Baseline Standard
B1	PCs for Full-time Faculty	1 PC for every full-time faculty member.
B2	PC's for Part–time Faculty	A goal of 25 percent of full-time equivalent faculty (FTEF) over the three years with a minimum of 1/3 in the first year.
B3	Printers	One advanced laser printer to be shared across 50 faculty staff.
B4	LAN Access	All PCs will have network access
B5	Office Software	Each PC has standard office software including word processing, spreadsheet and presentation-design software
B6	E-mail	Each PC have Web-based access to the campus e-mail system.
B7	E-mail for adjunct instructors	Each adjunct instructor will have an e-mail account.
B8	Internet/intranet access	Each PC is equipped with a browser.
B9	Virus-detection software	Each PC is equipped with anti-virus software.
B10	Scanners	There will be one industrial scanner for every 100 faculty members.
B11	Access to administrative systems	Each PC will have access to administrative systems when appropriate (by the end of 2003).
B13	Information resources and software	Each PC should be able to support faculty research of library databases, educational software and course management software.

Table 2. Faculty Access Baseline Standard

Managerial and Classified Staff PC Baseline Standard

	Category	Minimum Baseline Model
C1	PCs for full-time administrative and classified staff	1 PC for 80% of full-time managerial and classified staff, as appropriate.
C2	Printers	One advanced laser printer to be shared between 50 staff.
C3	LAN Access	Network access for each PC
C4	Office Software	Each PC has standard office software including word processing, spreadsheet and presentation-design software.
C5	E-mail	All staff members will have Web-based access to the campus e-mail system.
C6	Internet/intranet access	Each PC is equipped with a browser.
C7	Virus detection software	Each PC is equipped with anti-virus software.
C8	Access to administrative systems	Each PC will have access to the administrative system, when appropriate.

Table 3. Administrative and Classified Staff Infrastructure Standard

Total Cost of Ownership Model
TCO Computer Categories

Direct Costs of Hardware/Software		
Sub Category	**Cost/ yr. / PC**	**Assumptions**
PC hardware and Operating systems cost	$550/yr	(Acquisition depreciated over 3 years)
Assistive technology hardware and software(10% of PCs)	$667	(Acquisition depreciated over 3 years)
O/S and Office Software Licenses	$100/yr	
Peripherals	$100/yr	
Network Operating System Hardware	$45/yr	
NOS Licenses	$20/yr	
Switches, hubs and bridges (Hardware and Software)	$42/yr	
Wiring	$60/yr	
NSM Hardware and Software	$160/yr	
Servers (HDW and SFTW) for web services)	$50/yr	
Sub-Total Cost	**$1,794/yr.**	

*Note: Chart does not include printers for assistive technology. The printers are estimated at $4000 per printer. One printer per each lab that provided assistive technology would be necessary.

Direct Costs of Training		
Sub Category	**Cost/ yr. / PC**	**Assumptions**
Training	$250/yr	
Technical staff training	$75/yr	
Sub-Total Cost	**$325/yr**	

Direct Costs of Systems Management		
Sub Category	**Cost/ yr. / PC**	**Assumptions**
Network and Systems Admin. (Novel, etc. include wiring staff)	$313/yr	1 staff / 300 PCs;
Technical Management	*$238/yr*	1 / 500 PCs
Web Administration	$144/yr	1 staff per 12,000 FTES;
Administrative Systems Support (web, user dev. applications)	*$97/yr*	1 @ $85K + 25% = $106,250
Sub-Total Cost	***$762/yr.***	

Direct Cost of Support		
Sub Category	**Cost/ yr. / PC**	**Assumptions**
Level 1 Support	$417/yr	1 staff / 150 PCs
Sub-Total Cost	**$417/yr.**	

Direct Cost of Development Support		
Sub Category	**Cost/ yr. / PC**	**Assumptions**
Application Development	$148/yr	2 staff / 12,000 FTES
Sub-Total Cost	**$148/yr**	

Direct Cost of Communications Support		
Sub Category	**Cost/ yr. / PC**	**Assumptions**
Network	$60/yr	$24,000/yr : 1-6000 FTES $48,000/yr: 6,000-12,000 FTES $72,000/yr: 12,000-18,000 FTES $96,000/yr: 18,000+ FTES
Sub-Total Cost	**$60/yr**	
Total Cost (TCO)	**$3,506**	**Accumulative Cost**

The following are the key assumptions of the TCO model calculation:

- Funding model to assure appropriate staffing
- The TCO is composed of six areas and 19 items
- The total TCO is $3,506
- There is a 1:3 ratio of support staff costs to hardware/software costs
- There is a 3 year refresh rate for computers and related equipment
- 10% of all computers to be configured for assistive technology
- 14 hour per day student access, 6 days a week
- 2 hour response time for classroom support
- 24 hour response time for non critical problems

Appendix F - Standards and Guidelines for Allocation and Expenditure of the Technology Human Resources Fund

Overview: The capabilities, training and preparation of CCC faculty and staff is required for the successful introduction and implementation of information and educational technologies into the system. This fund establishes a base resource for the system to provide staff development specifically related to technology. The Human Resources Technology Training Fund is designed to provide resources for a variety of training activities for faculty and staff.

Background: In 1997-98, $4 million was allocated for the purposes of faculty and staff training in technology. Standards and guidelines were established and districts were required to develop expenditure plans for this funding. Funds were distributed on a formula basis that took into account the number of faculty and staff. The formula also established a minimum level of funding for college sites to protect small colleges. In 1998-99, the fund was increased to $6 million and to $8 million in 2000-01. Once again, districts are authorized to expend funds upon submission and approval of their 2000-01 Expenditure Plan for the Human Resources Fund. The Plan is to be developed through the shared governance committee for each college and approved by the local governing board. Funds may be carried into the next fiscal year.

Please note that other TTIP funds are being used to develop training packages, workshops, and on-line resource collections specifically designed to meet the needs of CCCs. These are free or at cost directly from the project themselves. For more information see the following websites:

http://one.fhda.edu @ONE is a Chancellor's Office sponsored training network and resource that provides on-line exchanges, training packages, workshops and other services.

The California Virtual University (CVU) Professional Development Center and the four CVU regional centers also are a source of on-line exchanges, training packages, workshops and other services. CVU Professional Development Center **http://pdc.cvc.edu** ; Bay Area Regional Center **http://cvc1.org** Los Angeles Regional Center **http://cvc2.org** Regional Center Serving Southern California **http://cvc3.org** Statewide and Rural Regional Center **http://cvc4.org**

I. Goals and Objectives for Technology Training

These goals and objectives should be consistent with the provisions and guidelines of the 2000-2001 Telecommunication and Technology Infrastructure Program (TTIP) as explained below. They should be justified in relationship to (a) need and/or (b) existing college plans, where appropriate.

It should be noted that the TTIP funds per the budget and legislative language are not allowed to supplant current staff development activities and that the allocation of these special technology training resources should follow similar campus shared governance committee on staff development recommendations.

II. Technology Human Resources Training Funds Guidelines

In defining the scope of need and setting priorities for the expenditure of the TTIP Human Resources Fund, all planning, implementation, evaluation and reporting should explicitly recognize that the use of any technology is for the purposes of:

a) improving the quality of the total student experience;
b) increasing the effectiveness of instruction;
c) broadcasting the access to instruction for those only or better able to gain access to courses, or to particular content, via the use of such technology;
d) reducing the costs or increasing the efficiency of college services while holding quality constant or improving upon it.

III. Allocations by Authorized Use Areas

The following are the authorized categories and areas descriptions for the Human Resources Technology Training Funds. This information is used by the Chancellor's Office in planning, advocacy, and reporting needs associated with faculty and staff development. There are no minimum funding levels for any of the areas listed below. Districts have the flexibility to use funds in any of the four categories.

1. Technology Training Infrastructure

1) Planning & Coordination

- Developing TTIP/Human Resource Expenditure Plans, conducting needs studies, coordinating technology training planning with staff development and other college-wide planning processes.
- Researching and evaluating training materials, presenters, services, sites and sources.
- Planning, implementing, tracking, evaluating and reporting on the other nine authorized categories and areas.

2) Faculty/Staff Development Center and Other Forms of Technical Support.

Establishment or expansion of the hours or services of a "teaching and learning center or centers", i.e., one or more sites on campus that contain (a) demonstration workstations with computers equipped to support a range of educational uses of technology; (b) information on teaching and learning, upon training opportunities, and educational

technology; and (c) space for training and discussions related to the educational uses of technology and the improvement of teaching and other educational services. Provision of technical support including coaching, assisting, and supporting the development and implementation of new modes of instructional and service delivery. Such assistance may be provided by technical staff and/or by unclassified (including students), classified or certified staff to fulfill the need specified by the college (see also #8, below for the need for and limitations upon this provision).

3) Purchase of Self-Paced Training Tools and Services (including tutorials, CD's, Web-based Training, Videos and materials and services that provide self-paced training and so forth).

4) Development of Training Materials, Self-Paced Learning Tools, and Templates and so forth

Released time and other expenses associated with a college or district developing their own training tools and materials for the use of their trainers or for self-paced training.

Colleges are encouraged to use these funds to develop and share tools (i.e. common templates, boiler plates, libraries, reusable learning objects, etc.) that lessen or preclude the need for specialized technical training among most practitioners.

At the same time in promoting the use of such tools, colleges are encouraged to invest heavily in promoting their most effective use, by incorporating in the design of these tools on-line reminders, guides or "wizards" that incorporate reminders, and/or are based upon sound pedagogical counseling and learning principles and practices.

2. Preparing for Technology Adoption

5) Introduction to Educational Uses of Technology

Attendance at conferences, development of Flex activities, and other activities designed to raise consciousness across a college of the potential use of technology and any plans a college may have to start using new forms of technology, and so forth.

6) Institutional Redesign

Research, training or consultation for the redesign of positions, academic structures, settings, processes, and policies to permit wider use of educational technology, alone, or in combination with alternative and traditional pedagogues, and including training or coaching in the management of change and continuous improvement related to the effective use of educational technology.

3. Direct Training

7) Using Educational Technology

Areas may include, but are not limited to: basic understanding of technology and telecommunications, presentation software and devices, management of e-mail and on-line discussion groups, real-time teaching at a distance, the use of Web-based research and communication tools, use of graphic, video-graphic, and virtual reality tools for creating learning objects, on-line registration and counseling tools, electronic transcripts, electronic cataloguing and library services and so forth.

To achieve full proficiency in the design of interactive, multi-media, and distance-based delivery, alone or in combination with other alternative modes of instruction (i.e. collaborative learning, learning communities and so forth) training in the theory of learning systems, learning styles, cognition, multi-culturalism, and assessment, and in the design of learning systems and curricula, may be paid for with these funds and is encouraged. The @ONE Project (see above and <one.fhda.edu>) offers training packages that address some of these areas.

In conducting training and development resources colleges should assure that the following standards are considered:

(a) The requirements of universal design, i.e. standards that assure full access to Web sites by those with special hearing or vision needs. **http://www.w3c.org/WAI**

(b) The standards for labeling educational materials, tools and other learning objects recently released by the Instructional Management Systems (IMS) project **http://www.imsproject.org.**

(NOTE: 'Learning objects' refers to courses, courseware, outlines of records, text files, simulations, multi-media and power-point lectures, assignments, exercises, assessment protocols or items, video-clips, audio-clips, photographs, graphics, and so forth. Whenever they are made available electronically for the purpose of education.

Labeling such objects using IMS standards allows educational users to readily find the objects that they need and to share, exchange, offer at cost or sell such objects, across different publishers, platforms and institutions, while protecting the integrity of original authorship.

IMS standards apply also to database structures and records related to student services, learning resources, and administrative functions and assure similar interoperability across different platforms and institutions.)

8) Training of Technical Support

Training for technical support skills, such as skills needed in the planning, purchase, configuration and installation, operation, maintenance and repair of educational equipment,

software, data transfer, and communication systems, including e-mail, web-servers, multi-media and telecommunications development and the technical aspects of distance-delivery.

9) Training of Trainers who are or will be employed by the college at least in part to provide training to other employees of the college related to technology and its educational uses, i.e. to provide the awareness and training listed under items #5, #7 and #8.

4. ***Practice and Demonstrations***

10) Development of Pilot and Model Applications Following Training

Includes coached practice in the development and use of media-based presentations, lessons, models, discussion group protocols, information retrieval processes, data-bases for student advisement transcripts, counseling at a distance, and other student services or administrative processes. Practice of new skills by developing new tools or materials, or reworking roles, are eligible activities, if the resulting materials or procedures are further used for the training of others.

Colleges are particularly encouraged to plan for and fund out of TTIP dollars "Learning Teams". Such teams can and should include faculty from different disciplines, learning resources professionals, counseling and other student services faculty, as well as staff qualified in instructional design and various media and technical skills and appropriate administrators or their representatives. Such teams should be used to develop new courses or redesign existing courses, to create learning objects, to train other teams and to cooperate with similar teams from other colleges and segments.

Appendix G: Distance Education: Access Guidelines for Students with Disabilities August 2000

URL: www.htctu.fhda.edu/dlguidelines/final%20dl%20guidelines.htm

Legal Requirements

Both state and federal law require community colleges to operate all programs and activities in a manner which is accessible to students with disabilities. Accordingly, as the system develops its capacity for creation of technology based instructional resources and the delivery of distance learning; it must proceed with the needs of all students in mind, including the unique needs of students with disabilities.

At the federal level, requirements for access for persons with disabilities were first imposed on recipients of federal funding by Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794) and its accompanying regulations set forth at 34 C.F.R. 104. Similar requirements were later imposed on all public entities, regardless of whether or not they receive federal funding, by the Americans with Disabilities Act (42 U.S.C. Sec. 12100 et seq) and the regulations implementing Title II of the ADA which appear at 28 C.F.R. 35.

In particular, the Section 504 regulations and the regulations implementing Title II of the ADA contain nearly identical provisions stating that recipients of federal funds and public entities in providing any aid, benefit or service, may not afford a qualified individual with a disability an opportunity to participate that is not as effective as that provided to others. (See 34 C.F.R. 104.4 (b)(1) (iii) and 28 C.F.R. 35.130(b) (1) (iii)). Title II recognizes the special importance of communication, which includes access to information, in its implementing regulation at 28 C.F.R. 35.160 (a). The regulation requires that a public entity, such as a community college, take appropriate steps to ensure that communications with persons with disabilities are as effective as communications with others.

The United States Department of Education, Office for Civil Rights (OCR) is responsible for ensuring that all educational institutions comply with the requirements of all federal civil rights laws, including Section 504 and Title II of the ADA. As a result, the opinions of OCR are generally accorded considerable weight by the courts in interpreting the requirements of these laws. OCR has had occasion to issue several opinions applying the requirements of the Section 504 and ADA regulations to situations involving access to distance education and/or computer-based instruction.

In responding to a complaint by a student with a disability alleging that a university had not provided access to the Internet, OCR noted that:

[T]he issue is not whether the student with the disability is merely provided access, but the issue is rather the extent to which the communication is actually as effective as that provided to others. Title II [of the Americans with Disabilities Act of 1990] also strongly affirms the important role that computer technology is expected to play as an auxiliary aid by which communication is made effective for persons with disabilities.

(OCR Docket No. 09-95-2206, January 25, 1996)

Adding additional clarity to the meaning of "effective communication," OCR has held that the three basic components of effective communication are: "timeliness of delivery, accuracy of the translation, and provision in a manner and medium appropriate to the significance of the message and the abilities of the individual with the disability."

(OCR Docket No. 09-97-2145, January 9, 1998)

OCR also points out that the courts have held that a public entity violates its obligations under the ADA when it only responds on an ad-hoc basis to individual requests for accommodation. There is an affirmative duty to develop a comprehensive policy in advance of any request for auxiliary aids or services.

Finally, in considering the magnitude and responsibility of this task, OCR states:

[T]he magnitude of the task public entities now face in developing systems for becoming accessible to individuals with disabilities, especially with respect to making printed materials accessible to persons with visual impairments, is comparable to the task previously undertaken in developing a process by which buildings were to be brought up to specific architectural standards for access. Buildings in existence at the time the new architectural standards were promulgated are governed by "program access" standards. However, buildings erected after the enactment of the new architectural standards are strictly held to the new standards on the premise that the builder is on-notice that such standards apply. One who builds in disregard of those standards is ordinarily liable for the subsequent high cost of retrofitting.

Similarly, from the date of the enactment of Title II onwards, when making purchases and when designing its resources, a public entity is expected to take into account its legal obligation to provide communication to persons with disabilities that is "as effective as" communication provided to non-disabled persons. At a minimum, a public entity has a duty to solve barriers to information access that the public entity's purchasing choices create, particularly with regard to materials that with minimal thought and cost may be acquired in a manner facilitating provision in alternative formats. When a public institution selects software programs and/or hardware equipment that are not adaptable for access by persons with disabilities, the subsequent substantial expense of providing access is not generally regarded as an undue burden when such cost could have been significantly reduced by considering the issue of accessibility at the time of the initial selection.

(OCR Docket No. 09-97-2002, April 7, 1997)

There are also state laws and regulations which require community colleges to make their distance education offerings accessible to students with disabilities.

Government Code Section 11135 et seq. prohibits discrimination on various grounds, including mental or physical disability, by entities receiving funding from the State of California. The Board of Governors has adopted regulations at Title 5, California Code of Regulations, Section 59300 et seq. to implement these requirements with respect to funds received by community college districts from the Board of Governors or Chancellor's Office. These regulations require community college districts and the Chancellor's Office to investigate and attempt to resolve discrimination complaints filed by students or employees.

In addition, the Board of Governors has adopted Title 5 regulations setting forth the general requirements applicable to all independent study (Sections 55300 et seq.) and those requirements specific to distance education courses (Sections 55370 et seq.). Section 55370 expressly states that the requirements of the Americans with Disabilities Act are applicable to distance education courses.

The remainder of this document sets forth guidelines developed by the Chancellor's Office to address specific issues community college districts will face in meeting their legal obligation to make distance education courses accessible to students with disabilities. These guidelines are not legally binding on districts, but the Chancellor's Office will apply these guidelines in determining whether a district has met its obligations under Title 5, Section 55370 and 59300 et seq. Districts which follow these guidelines will generally be regarded as having met those obligations. Districts which do not follow these guidelines will bear the burden of demonstrating that they have achieved compliance with their legal obligation to provide access to distance education for students with disabilities by other means.

Basic Requirements for Providing Access

The following are general principles that should be followed in ensuring that distance education courses are accessible to students with disabilities. They represent the general concepts of the ADA and its regulations but do not provide a detailed legal analysis of the ADA requirements. Persons utilizing this document who are unfamiliar with the ADA may wish to consult the campus ADA Coordinator or DSP&S Coordinator for further interpretation. In the remainder of this document, specific guidelines will be provided for resolving access issues with respect to particular delivery modes commonly used in distance education.

1. One of the primary concepts of distance education is to offer students "Learning anytime, anywhere." Therefore, all distance education resources must be designed to afford students with disabilities maximum opportunity to access distance

education resources "anytime, anywhere" without the need for outside assistance (i.e. sign language interpreters, aides, etc.).

2. Distance education resources must be designed to provide "built-in" accommodation where possible (i.e. closed captioning, descriptive narration) and/or interface design/content layout which is accessible to "industry standard" assistive computer technology in common use by persons with disabilities.

3. Whenever possible, information should be provided in the alternative format preferred by the student (i.e. sign language interpreter, closed captioning, descriptive narration, Braille, audio tape, large print, electronic text). When choosing between possible alternative formats or methods of delivery, consideration should be given to the fact that methods which are adequate for short, simple or less important communications may not be equally effective or appropriate for longer, more complex, or more critical material (Example: Use of a telephone relay service may be an acceptable method for a faculty member to respond to a brief question from a deaf student during his/her office hours, but probably would not be appropriate as a means of permitting that same student to participate in a class discussions in a course conducted by teleconference.) Issues concerning accommodation should be resolved through appropriate campus procedures as defined under Title 5, Section 56027.

4. Adoption of access solutions which include assigning assistants (i.e. sign language interpreters, readers) to work with an individual student to provide access to distance education resources should only be considered as a last resort when all efforts to enhance the native accessibility of the course material have failed.

5. Access to distance education courses, resources and materials include the audio, video and text components of courses or communication delivered via satellite, Instructional Television Fixed Services (ITFS), cable, compressed video, Local Area Network/Wide Area Network (LAN/WAN networks), Internet, telephone or any other form of electronic transmission. Access to resources and materials include the audio, video, multimedia and text components of Web sites, electronic chat rooms, e-mail, instructional software, CD-ROM, DVD, laser disc, video tape, audio tape, electronic text and print materials. Where access to Web sites not controlled by the college is required or realistically necessary to completion of a course, the college must take steps to ensure that such sites are accessible or provide the same material by another means that is accessible.

6. Distance education courses, resources and materials must be designed and delivered in such a way that the level of communication and course taking experience is the same for students with or without disabilities.

7. After the adoption date of these guidelines, any distance education courses, resources or materials purchased or leased from a third-party provider or created or substantially modified "in-house" must be accessible to students with disabilities

unless doing so would fundamentally alter the nature of the instructional activity or result in undue financial and administrative burdens on the district.

8. Colleges are encouraged to review all existing distance education curriculum, materials and resources as quickly as possible and make necessary modifications to ensure access for students with disabilities. At a minimum, the Chancellor's Office will expect that the curriculum for each distance education course and its associated materials and resources will be reviewed and revised as necessary when the course undergoes curriculum review pursuant to Title 5, Sections 55002 and 55378, every six years as part of the accreditation process. In the event that a student with a disability enrolls in an existing distance education course before this review is completed, the college will be responsible for acting in a timely manner to making any requested modifications to the curriculum, materials or resources used in the course, unless doing so would fundamentally alter the nature of the instructional activity or result in undue financial and administrative burdens on the district.

9. In the event that a discrimination complaint is filed alleging that a college has selected software and/or hardware that is not accessible for persons with disabilities, the Chancellor's Office and the U.S. Department of Education , Office for Civil Rights will not generally accept a claim of undue burden based on the subsequent substantial expense of providing access, when such costs could have been significantly reduced by considering the issue of accessibility at the time of initial selection.

10. In all cases, even where the college can demonstrate that a requested accommodation would involve a fundamental alteration in the nature of the instructional activity or would impose an undue financial and administrative burden, it must nevertheless provide an alternative accommodation which is equally effective for the student if such an accommodation is available.

11. Ensuring that distance education courses, materials and resources are accessible to students with disabilities is a shared college responsibility. All college administrators, faculty and staff who are involved in the use of this instructional mode share this obligation. The Chancellor's Office will make every effort to provide technical support and training for faculty and staff involved in the creation of accessible distance education courses, resources and materials through: campus representative(s) to the California Virtual University (CVU) Regional Distance Education Center, staff from the local Regional Distance Education Center(s), campus High Tech Center staff and High Tech Center Training Unit staff.

Workshop Schedule

The CCC Chancellor's Office, Instructional Resources and Technology Unit (IRT) will be conducting workshops to address any questions and/or concerns related to the 2000-02 Telecommunications and Technology Infrastructure Program (TTIP), There are some new elements in the 2000-01 program, such as the Total Cost of Ownership (TCO), that may generate questions from the field. These workshops will be conducted through videoconferencing and will originate from a Chancellor's Office videoonferencing room. Colleges are asked to **RSVP by October 10th** to reserve space for these workshops. Please indicate your first, second and third choice and reply to Charles Mawson, **cmawson@cccco.edu** or 916-327-5902, fax 916-445-2946 by the above date.

Workshop 1	Thursday, October 19, 2000 10 am – 12 pm Executive Conference Room
Workshop 2	Friday, October 20, 2000 10 am – 12 pm Room 3A
Workshop 3	Wednesday, October 25, 2000 1:30 pm – 3:30 pm Room 3A

FORMS TO BE SUBMITTED

Due Date

November 22, 2000

TO CERTIFY THE DISTRICT FOR

2000-2001 TTIP CERTIFICATION FOR

EXPENDITURES

2000-2001 TTIP Certification Checklist

This 2000-2001 TTIP Check list must be submitted with Form A, B and C to the Chancellor's Office by November 22, 2000.

FORM	INITIAL
Form A: 2000-2001 (TTIP) Certification for Expenditures *Did you remember to have the Chief Executive Officer sign form A? Only one form to be signed by the Districts CEO in blue or red ink.*	☐
Form B: 2000-2001 Telecommunication and Technology Infrastructure Program (TTIP) District/College Expenditure Plan Form *Did you remember to have the Chief Business Services Officer sign form B? One form per site (example Los Rios District has 4 funded sites they should have 4 Form Bs).*	☐
Form C: 2000-2001 TTIP Technology Training Expenditure Plan for *One form per site (example Los Rios District has 4 funded sites they should have 4 Form Cs).*	☐

Must be returned by November 22, 2000

Note: Please provide an original signed copy plus five (5) additional copies to be distributed to the Chancellor's Office TTIP Review staff.

FORM A

2000-2001 Telecommunication and Technology Infrastructure Program (TTIP)
Certification For Expenditures

This district certifies that all funds received for the telecommunications and technology infrastructure program will be spent in accordance with the provisions and guidelines below.

_____ _____
Signature Chief Executive Officer ***Date Signed***

_____ _____
Printed Name ***Phone Number***

_____
District

Date Approved by the district's Board of Trustees _____

Certification

Districts are to certify that they will spend their funds allocation in accordance with the program guidelines. These funds are not to supplant existing funds used for telecommunications and are intended to expand existing capability and infrastructure beyond the site's current level. The certification is required as a condition for the receipt and expenditure of the State allocated funds. Funds detailed in this document are contingent on current proposed revision and correction of the 2000-01 Budget language.

THE EXPENDITURE PLAN FOR FISCAL YEAR 2000-2001 MUST BE SUBMITTED TO THE DISTRICT'S LOCAL BOARD OF TRUSTEES.

Funds are allocated to the districts as part of their August 2000 Advanced General Apportionment for the data and video networking portions of 4CNet services. Ninety percent of the balance of the TTIP funds will be allocated as part of the First Principal Apportionment period, February 15, 2001. The remaining 10% will be allocated in the Second Principal Apportionment period, June 30, 2001.

Districts are to return 2000-2001 TTIP Certifications by November 22, 2000, to:

Attention: Charles Mawson
Instructional Resources & Technology Unit
Educational Services and Economic Development Division
California Community Colleges, Chancellor's Office
1102 Q Street
Sacramento, CA 95814

BEST COPY AVAILABLE

FORM B

2000-2001 Telecommunications Technology Infrastructure Program, (TTIP)
District/College Expenditure Plan

Instructions: Please print or type.
Please refer to 2000-2001 TTIP Certification document when completing this form.
Describe general areas of expenditure for 2000-2001 TTIP funds especially in relationship to Planning and TCO Model initiative categories.

District/College_____

Telecommunications Administrative Contact_____

Title:_____

Address:_____

Phone Number:_____

E-mail Address:_____

Fax Number:_____

A. Areas of Expenditure:		
	2000-2001 TTIP Funds	Prior TTIP Funds Carry Over
1. 4CNet		
(a.) 4CNet Data (monthly and network charges)		
(b.) 4CNet Video (T-1 monthly charges)		
2. Library Automation		
3. Satellite (Funding provided in 1996-97 TTIP Program)		
4. Technology Planning		
5. Technology for Access through Total Cost of Ownership (TCO) Options		

• Hardware/Software		
• Systems Management and Support		
• Development Support		
• Communications Support		
• Training		
6. Technology Human Resources Training Fund (Please provide detail information on Form C page 40)		
Chief Business Services Officer Signature:_____		

Please complete the following information:

B. Describe the conformance of the proposed expenditure plan to applicable standards and guidelines. (*Use additional pages as needed. Can be in a table format.) The expenditure plan should state how the funds meet the minimum standards and guidelines specified in the attached appendices for 4CNet connections, video conferencing, satellite downlinks, Technology for Access through TCO Model options and library automation as applicable.*

C. How each expenditure area in the plan will assist in meeting the goals of improved learning, student services, and administrative services. (*Use additional pages as needed.) The district's expenditure plan should state how the districts use of video conferencing technology, satellite technology, Technology for Access through theTCO Model options and library automation will improve student learning, student services delivery and administrative services.*

FORM C

TTIP TECHNOLOGY TRAINING EXPENDITURE PLAN FOR 2000-2001

District/College: _____

Contact Information

Name of Person
Preparing Report _____

Title _____

Telephone ( ) _____ E-Mail _____

1. Goals and Objectives for Technology Training

Please provide a narrative explaining your Goals and Objectives for Technology Training:

These goals and objectives should be consistent with the provisions and guidelines of the 2000-2001 Telecommunication and Technology Infrastructure Program (TTIP) as explained in the Allocations by Authorized Use Areas on page 25. They should be justified in relationship to (a) need and/or (b) existing college plans, where appropriate.

2. Allocations by Authorized Use Areas

The following are the authorized areas for the Human Resources Technology Training Funds. This information is used by the Chancellor's Office in planning, advocacy, and reporting needs associated with faculty and staff development. There are no minimum funding levels for any of the areas listed below. Districts have the flexibility to use funds in any of the four categories.

Please fill in table below.

1. Technology Training Infrastructure		TTIP/F $ Allocated	AB1725 $ Allocated	Other Funds $ Allocated
1)	Planning & Coordination			
2)	Faculty/Staff Development Center (See Details below.)			
3)	Purchase of Self-Paced Training Tools and Services			
4)	Development of Training Tools and Materials			
2. Preparing for Technology Adoption		**TTIP/F $ Allocated**	**AB1725 $ Allocated**	**Other Funds $ Allocated**
5)	Introduction to Educational Uses of Technology			
6)	Institutional Redesign			
3. Direct Training		**TTIP/F $ Allocated**	**AB1725 $ Allocated**	**Other Funds $ Allocated**
7)	Using Educational Technology			
8)	Training of Technical Support			
9)	Training of Trainers			
4. Practice & Demonstrations		**TTIP/F $ Allocated**	**AB1725 $ Allocated**	**Other Funds $ Allocated**
10)	Using Educational Technology			
	*TOTAL DOLLARS			

*Total Dollars:

- TTIP/F $ Allocated, must equal TTIP/HR Fund Allocation
- Total of TTIP/F $ Allocated and AB 1725 $ Allocated, must equal or exceed total amount spent on these activities in the previous year, 1999-2000.